Floodplain Management *Today*

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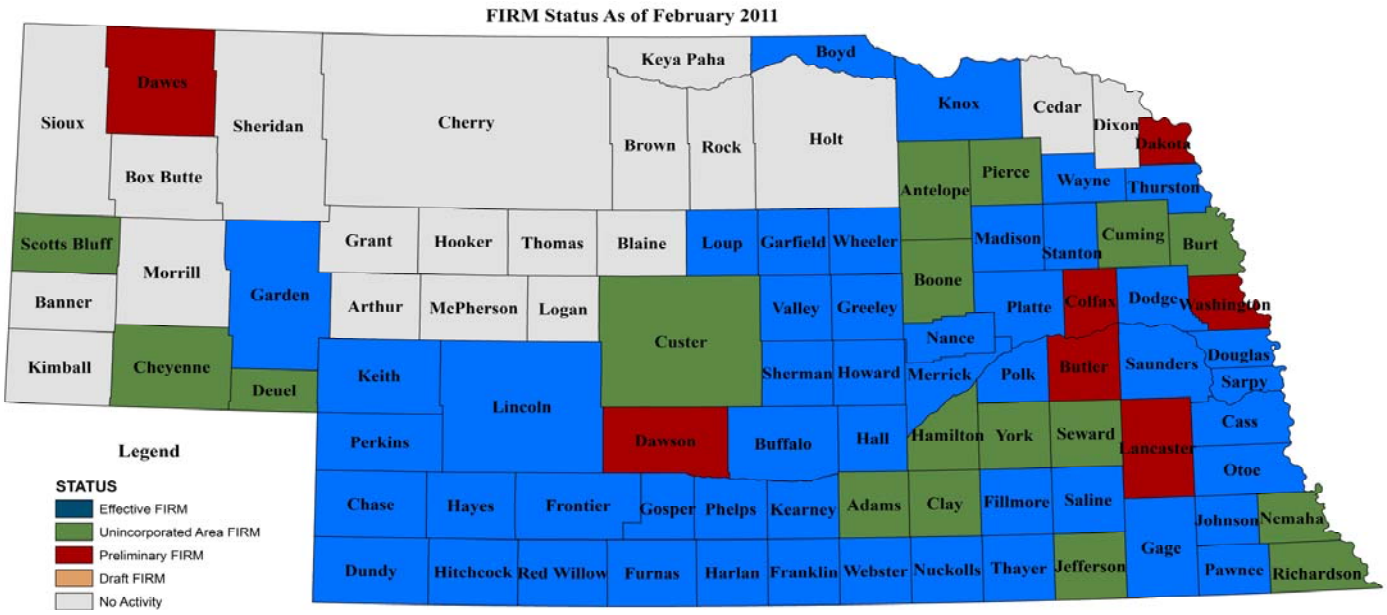
Nebraska Department of Natural Resources
Floodplain Management Section
http://dnr.ne.gov/floodplain/floodplain.html

Floodplain Mapping Status and Outlook

By Shuhai Zheng, PhD, PE, CFM

One of the statutory responsibilities charged to the Nebraska Department of Natural Resources (NDNR) is to provide local governments having jurisdiction over flood-prone lands with technical data and maps adequate to develop or support reasonable floodplain management regulation. Under the Cooperating Technical Partnerships (CTP) Agreement dated August 16, 1999, between NDNR and the Federal Emergency Management Agency (FEMA), the NDNR Floodplain Management program has been able to leverage FEMA funding to speed up county-wide digital floodplain mapping efforts. Currently 49 counties have effective maps and seven counties have preliminary maps. (See map below).

In the past year, NDNR has been working on mapping projects for Dawes, Colfax, and portions of Lancaster County. Working maps have been completed for Cedar and Dixon counties. With the Community Development Block Grant from the Nebraska Department of Economic Development, NDNR has begun to develop working maps for Seward, York, Hamilton, Adams, and Jefferson counties. These five counties are being mapped using current and more accurate Light Detection and Ranging (LiDAR) topographic elevation data. The LiDAR data was acquired in 2009 and processed in 2010 for south-central Nebraska.



Water Under the Bridge

By Steve McMaster

In the last few years, extreme rain events have caused major flooding in Iowa (2008 and 2010) and Nashville, Tennessee. But what about in Nebraska – what is the official 24-hour rainfall record, and is that 'official' record really correct? This year marks the 60-year anniversary of the season of flooding of 1950. Of all the creeks and rivers that flooded that year, the two hardest hit were probably the Little Nemaha River and Salt Creek. Not only were rainfall numbers high, but the entire spring and summer were witness to above-average rainfall amounts that saturated the soil and turned the big rains into big floods. The biggest rain of them all was the 'official' record of 13.15 inches in 24 hours at York, which caused Beaver Creek to jump its banks and caused problems in York. However, it wasn't over with York as over a foot of rain continued downstream – to the West Fork Big Blue River at Beaver Crossing and the Big Blue River at Crete. Tragically, major floods also bring major flood risk, and 1950 saw the second-highest number of flood-related casualties (25) in Nebraska history – second only to the Republican River flood of 1935. Every major flood teaches new lessons, and the 1950 taught us that: 1) do not drive through flood water, 2) the amount of rain that we might expect in one day in Nebraska, and 3) the benefits of sound floodplain management.

Lincoln - Driver assessing flood damage, location unknown
Photo courtesy of Ed Zimmer, Lincoln Planning Department

For the complete article and more visit us online at: http://dnr.ne.gov/floodplain/docs/Flooding_1950.html

Risk Mapping, Assessment, and Planning: Risk MAP

The Federal Emergency Management Agency's (FEMA) new floodplain mapping program, Risk MAP, will deliver high quality mapping data and provide citizens with the tools to enhance their flood mitigation plans to better protect their families and property. Risk Map, Assessment, and Planning (Risk MAP) is a program Congress approved on March 16, 2009 to be carried out over the fiscal years of 2010-2014 to better protect communities from flood risk.

The Risk Map goal, through collaboration with State, Tribal, and local entities, is to increase public awareness of flood dangers by delivering the most accurate mapping data available. Along with building on the Flood Map Modernization (Map Mod) program, Risk MAP will strengthen local ability to make informed decisions about protecting the community from flood risk by enabling them to assess risks and identify actions to reduce vulnerability to those risks.

Little Salt Creek Watershed in Lancaster County has been chosen as a pilot project to demonstrate the new Risk MAP products. Our first watershed-based mapping project under the Risk MAP is for the Hydrologic Unit Catalog No. 10270207. This watershed covers portions of Jefferson, Thayer, Fillmore, and Saline counties and will start during the 2011 federal fiscal year.

For watershed level studies in the future, FEMA will prioritize projects based on the "trifecta", which is risk, need, and the availability of elevation data. The risk will be determined using the annualized loss estimate study results. The need will be based on the Coordinated Needs Management Strategy (CNMS) data. Availability of elevation data will include new Light Detection and Ranging (LiDAR) topographic elevation data meeting FEMA standards.

For More Information on Risk MAP follow this link:
http://www.fema.gov/plan/prevent/fhm/rm_main.shtm

What the Heck is CNMS?

By Crystal Lesmeister CTP Project Manager

No, CNMS does not stand for Crazy Newfangled Mapping System. CNMS actually stands for Coordinated Needs Management Strategy and it is FEMA's new method for tracking the engineering studies used to make floodplain maps. It is a way for information related to flood hazard mapping needs to be organized, stored, and analyzed. Another important feature of CNMS is its database with GIS mapping capabilities.

As you can imagine, gathering and organizing all this information is no small task. This is why CNMS is being completed in several phases. In the early phases, simple "bulk validation" rules were used to quickly identify studies as valid or invalid. Studies that didn't fit these criteria were flagged. Now as part of Phase III these flagged studies are being looked at in greater detail.

NDNR kicked off Phase III in early August 2010 and completed it at the end of 2010. During this phase, we were mostly looking at studies corresponding to Zone AE with the Base Flood Elevations (BFEs) shown on the floodplain maps. The main goal of Phase III was to determine if the conditions represented in the hydrologic and hydraulic models have changed significantly. In order to determine this, we needed to answer a series of questions about what may have caused the conditions to change. The following is a sample of these questions:

- Has the stream flow significantly increased or decreased?
- Has the channel moved or been modified?
- Has the shape of the channel changed due to scour or channel improvements?
- Have any bridges or dams been added or removed from the stream that may make the water flow differently?
- Has the land use changed?

A "Yes" to any of those questions may suggest that the study may no longer be valid because the current conditions are not accurately represented. In the future, this information will help FEMA and NDNR plan and prioritize projects by identifying areas with the highest mapping needs.

During this process we gathered and examined information from Flood Insurance Studies (FIS) reports, aerial photographs, and NDNR files for all of the detailed studies in Nebraska except for those within Papio-Missouri River Natural Resources District's jurisdiction. All of this information was put into the CNMS database, and given GIS mapping capabilities. With 250 studies to review in less than five months, we were fortunate to have the assistance of numerous NDNR staff members and their help was greatly appreciated. Now that Phase III is complete, NDNR will continue to maintain and update the CNMS database as additional information becomes available.

So now you know what CNMS means and why it will be useful. If there is any information about your community that you believe would be important to include in the CNMS database, please feel free to contact us.

VISIT US ONLINE:

For floodplain management tools and links as well as stories, and pictures, visit our website:

http://dnr.ne.gov/floodplain/floodplain.html

Second Annual Floodplain and Storm Water Management Conference

On July 30th, 98 people attended the Second Annual Statewide Floodplain and Stormwater Management Conference at the Ramada Conference Center in Kearney. The conference was sponsored by AECOM, HDR, FEMA, JEO, NDNR, Olsson Associates, and Schemmer Associates. The attendance number was down slightly from the 102 who attended the first conference in Lincoln in 2009; however, there were six more registrations this year than last year. The NDNR was very pleased with the turnout for the conference since it was the first attempt at having a conference outside of the Nebraska metro areas. The keynote luncheon address from Dr. Ken Dewey, Professor of Applied Science from the University of Nebraska – Lincoln, was called "Flash Floods: Their Climatology and Human Responses to the Threat". Many attendees reported that Dr. Dewey's presentation was excellent and a highlight of the conference. Also at lunch, George Reidel, Deputy Executive Director for the Association of State Floodplain Managers, presented a plaque to Jesse Poore and other officers to recognize NeFSMA as an official ASFPM Chapter.

NDNR staff who also presented at the conference were:

- Bill Jones: Community Guidance and Administrative Procedures – Policies and Ordinances ("NFIP 101")
- Shuhai Zheng: Hydrology and Hydraulics for Floodplain Management
- Steve McMaster: What Does it Take to Secure a FEMA Mitigation Grant?

Dr. Kenneth Dewey, Professor of Applied Climate Science at UNL, delivers his keynote presentation "Flash Floods: Their Climatology and Human Responses to the Threat."

Bill Jones presents his topic, "NFIP 101," at the 2010 Floodplain and Storm Water Management Conference in Kearney.

Randy Behm, P.E. with the Omaha District of the U.S. Army Corps of Engineers provided a workshop on levees.

Attendees enjoy refreshments while exchanging ideas during a round table session on various topics relating to floodplain and stormwater issues.

George Riedel, Deputy Executive Director of ASFPM, provided a workshop on "No Adverse Impact," a concept of addressing long range impacts of development that will have negative impacts on existing floodplain development.

Shuhai Zheng NDNR Floodplain Management Head and Ben Higgins with the city of Lincoln give their presentation on "Hydrology and Hydraulics for Floodplain and Storm water Management.

Thank you to those who attended the conference in Kearney!

Our Third Annual Statewide Floodplain and Stormwater Conference will be June 23, 2011 at Mahoney State Park near Ashland, I-80 Exit 426.
See you there!

Ask Bill: Q & A with Bill Jones

Floodplain Management Specialist

Q: What is the Preferred Risk Policy 2-year extension and who is eligible?

A: A summary from a FEMA Bulletin is provided here.

1. *What is a Preferred Risk flood insurance policy?*
A Preferred Risk Policy, or PRP, is a low-cost policy available to residential and non-residential buildings and its contents based on preferred rates for qualified structures in moderate-to-low risk areas. A PRP offers two types of coverage: A Building & Contents policy or a Contents only policy.

2. *What are the changes to PRP that could affect me?*
The Federal Emergency Management Agency (FEMA) announced on Friday, May 21, 2010, a revision in its PRP eligibility rules under the National Flood Insurance Program (NFIP).

Currently, in order to be eligible for the PRP, the building must be designated outside of a Special Flood Hazard Area (SFHA), on the date of application and premium presentment, or the renewal effective date for existing PRP policyholders. An SFHA is a high risk flood area, meaning that there is a one-percent annual chance of flooding.

For policies effective on or after January 1, 2011, FEMA is extending PRP eligibility for 2 policy years following the effective date of the current Flood Insurance Rate Map (FIRM) for owners of buildings newly included in SFHAs.

At the end of the extended eligibility period, policies on these buildings must be written as standard-rated policies.

3. *Is the second year of the PRP retroactive?*
No. By law, FEMA cannot provide this extension retroactively. The good news is that moving forward, those eligible for the PRP will be able to purchase their policies at the lower rate for two years.

4. *Exactly what kind of properties are eligible for the 2-year PRP extension?*
Buildings that were newly designated within an SFHA due to a map revision on or after October 1, 2008, and before January 1, 2011, are eligible for a PRP for 2 policy years. Property owners affected by these previous map revisions will be eligible for the PRP for the 2 policy years effective between January 1, 2011, and December 31, 2012.

- Buildings that will be moved from a non-SFHA to an SFHA due to a map revision on or after January 1, 2011, will be eligible for a PRP for 2 policy years from the map revision date.

New Certified Flooplain Managers

Two NDNR staff members, Andrew Christenson and Crystal Lesmeister, recently passed the Association of State Floodplain Managers (ASFPM) Certified Floodplain Manager (CFM) Exam. By becoming CFMs, they have demonstrated their knowledge of the basic national standards and programs of floodplain management and have joined the ranks of dedicated floodplain management professionals. Congratulations!

Do you want to become CFM?
For training materials and an exam schedule contact Bill Jones (402-471.3932, bill.jones@nebraska.gov).

Meet Some New Floodplain Management Division Team Members

There are quite a few new faces at the Nebraska Department of Natural Resources (NDNR) in the Floodplain Management Division. Even though some team members have been in their positions for awhile now, this may be their first introduction to some Floodplain Management Today newsletter recipients. So let's meet some of the Floodplain Management Division team members:

Craig Wacker AICP, LEED, AP has started as NDNR's Natural Resources Planner Coordinator. His position applies for and administers federal grants from the Federal Emergency Management Agency and assists in the completion of flood and hazard mitigation plans for Nebraska's communities and the Natural Resource Districts.

Rebecca Groshens has transitioned from Natural Resource Specialist into the position of Floodplain Mapping Specialist, where she specializes in working with Geographic Information Systems (GIS) to create digital flood maps and flood insurance rate maps.

Shelley Schindler and **Nataliya Ly**s are Natural Resource specialists for the team. They both started working with the national hydrographic dataset at the NDNR before switching to the Floodplain Management Division where they help Rebecca with floodplain mapping and assist their co-workers with various GIS projects.

Katie Ringland, PE, CFM joined the NDNR as an Engineer in November of 2010. Her duties include coordination and preparation of detailed floodplain studies and reports that include performing detailed hydrologic studies, hydraulic modeling, and approximate floodplain mapping. She provides technical assistance related to floodplain management activities to communities, counties, and other state agencies. This includes Base Flood Elevation (BFE) determinations using the N-FACT tool, Flood Insurance Rate Maps, Flood Insurance Studies and other related floodplain sources. Katie also helps the CTP project manager in overseeing NDNR portion of the mapping process.

Now you have been briefly introduced to some of the people who make up the NDNR's Floodplain Management Division and are a little more familiar with what they do. This article describes only a small portion of what these team members do and they are always at your disposal for questions and information concerning your local floodplain.

Make Sure We Have Your Latest Information So We Can Send You Our Latest Information

Has your address or phone extension changed? Does your community have a new Floodplain Administrator? If so, go to the Floodplain Management website: ***http://dnr.ne.gov/floodplain/floodplain.html*** and click on "Instant Floodplain Administrator Change Form." Simply fill in the blanks and click "Send." Your updated information will come straight to us, and we will immediately change our databases. This will save time and postage, and you will avoid delays in receiving our latest announcements and messages. Thanks!

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